SENATE JUDICIARY
EXHIBIT NO. 8
DATE 1/20/09
BILL NO. SB212

SB 212 Enforcement of Medical Marijuana Limitations

What will SB 212 do to help make Montana highways safer?

- Send a clear message to medical marijuana registrants that driving under the influence of marijuana is prohibited. Many users believe that is safe for them to drive.
- Empower the DPHHS to revoke a registration if the registrant violates any limitation of the Medical Marijuana Act, including driving under the influence of marijuana.

How dangerous is driving under the influence of marijuana? [THC is the active ingredient measured in blood]

- Drivers under the influence of marijuana [THC >5ng/ml] are more likely to cause a fatal crash than drivers under the influence of alcohol at BAC 0.1%, [25 % over DUI limit in Montana].
- In controlled road tests critical tracking [keeping the car in the driving lane] was significantly impaired, even with low doses of marijuana.

Why is a person with small amounts of THC (<5 ng/ml) and alcohol > 0.02% inferred to be under the influence?

- THC and alcohol together have a much greater effect on crash risk than either drug alone.

What are average levels of THC in blood after smoking marijuana? How long does it stay in the blood?

- This is extremely variable, based on dose of drug and ability of smoker to absorb it, but
- In an occasional user average maximum level is 49 ng/ml, in a heavy user it is 120 ng/ml
- In an occasional user the THC is gone from serum in 8 hours, in a heavy user THC is always present in serum because THC is stored in the fatty tissues of the body and released slowly.

How many medical marijuana registrants have had their registration revoked due to a violation of the limitations of the Medical Marijuana Act MCA 50-46-205?

- None. [2 have been revoked based on recommendation of their physician]

How many adult residents of Montana have medical marijuana registration cards?

- 1577 patients and 465 caregivers; TOTAL 2042

Does this bill change the qualification criteria or process for obtaining and/or renewing a registration?

- No, this will not change access to medical marijuana registrations for qualified patients, however it will empower the DPHHS to revoke a registration if a patient violates limitations of MCA 50-46-205

Does this bill change the current statutory limitations in the Medical Marijuana Act?

- No. The first limitation, "This chapter does not permit any person to operate, navigate, or be in actual physical control of any motor vehicle, aircraft, or motorboat while under the influence of marijuana," is unchanged.
- The addition of specific blood levels of THC to provide inferences comparable to BAC for alcohol will help define "under the influence."

Does this bill take away the rights of a DUI suspect to refuse testing for drugs and alcohol in breath or blood?

- No, the registrant may still refuse. However, in addition to the civil action to seize the person's driver's license, the medical marijuana registration certificate will also be seized and sent to DPHHS.

Will this bill have a significant fiscal impact?

- It is unlikely that there will be a large number of these incidents, so the overall fiscal impact to state and local agencies should be very small.
- There may substantial savings to Montana taxpayers by reducing traffic fatalities and injuries

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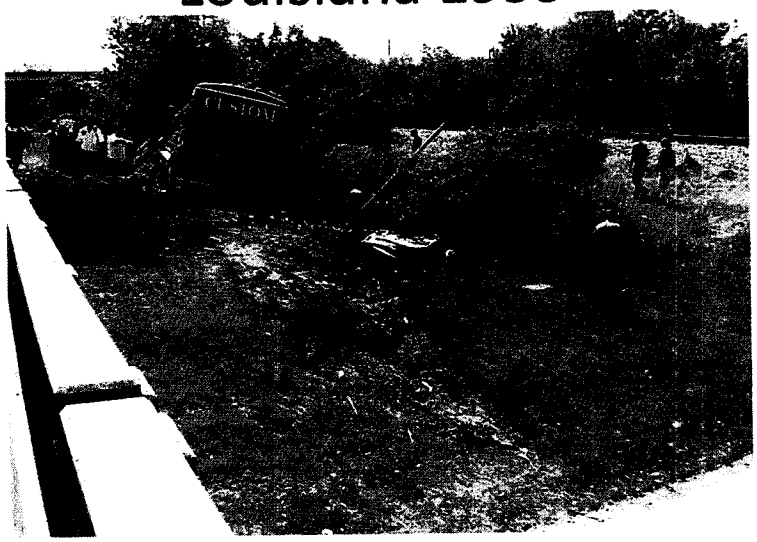
SB 212 Enforcement of Medical Marijuana Limitations

Driving a vehicle and/or working in a safety sensitive job is dangerous.

A momentary lapse of concentration can result in serious injury or death.

Louisiana 1999



22 dead, 16 severely injured, 5 minor injuries
Driver was under the influence of marijuana (THC 8ng/ml)

A person under the influence of marijuana is impaired:
Drivers cause crashes
Employees cause workplace injuries, death, and property damage
It isn't just the user's life in danger

Montana Drivers and Marijuana:

- 2006 Alcohol and/or drug related fatal crashes 43.8% of total[1]
- 2008 1311 DUI specimens analyzed by Montana crime lab[2]
  - Positive findings: 65% alcohol, 30% drugs, 35% poly drugs, 44% drugs & alcohol
  - In specimens positive for drugs: cannabis found in 43.9%
  - 169 specimens positive for cannabis
  - 107 specimens THC > 2 ng/ml
  - 85 specimens THC + alcohol
  - 33 specimens THC in a fatality

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SB 212 Enforcement of Medical Marijuana Limitations

Scientific evidence of impairment from marijuana:

- Laboratory based [animal & human]
  - Physiologic [e.g, DSST, Critical tracking, Stop signal]
  - Cognitive [e.g., Wechsler, Tower of London]
- Simulated task [driving, machinery]
  - Cars on a test course [knock over the cones]
  - Computer based simulators
- Epidemiologic
  - Population crash/death/injury risk
  - Drug use in the population

Drugs and Human Performance Fact Sheets[3]

- National Highway Traffic Safety Administration
- Panel of international experts
  - Psychopharmacology, behavioral psychology, drug chemistry, forensic toxicology, medicine, and law enforcement officers trained in the recognition of drug effects on drivers
- Identified the specific effects that both illicit and prescription drugs have on driving
- Developed guidance for others when dealing with drug-impaired driving problems
- Cannabis/marijuana fact sheet:
  - "Epidemiology data from road traffic arrests and fatalities indicate that after alcohol, marijuana is the most frequently detected psychoactive substance among driving populations."
  - "Decreased car handling performance, increased reaction times, impaired time and distance estimation, inability to maintain headway, lateral travel, subjective sleepiness, motor incoordination, and impaired sustained vigilance have all been reported."
  - "Mixing alcohol and marijuana may dramatically produce effects greater than either drug on its own."

Pot Smoking Pilots[4]

- Simulator flights 0, 0.25, 4, 8, 24, 48 hr after smoking marijuana
- Significant effects at 24 hours, recovered at 48 hr
- "At 8 and 24 hours pilots reported no subjective experience of the drug's effect, even though objective measures of performance showed decrements."

If smoking marijuana doesn't make sense here,
does it make sense when you drive?

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SB 212 Enforcement of Medical Marijuana Limitations

Blood levels of THC in heavy and occasional marijuana users[5]

- Heavy User: > 4 times per week for the last year
  - 1-2 cannabis joints on 4-25 occasions previous week
  - Most recent use more than 8 hours prior to start of study
- Occasional User: weekly use or less
  - 3 of the 11 used 1 joint previous week; others none
- Participants were given marijuana [THC 500 ug/kg] or placebo [no THC]
- Occasional users given placebo had no detectable THC in blood [not included in chart]

THC ng/ml	Occasional User	Heavy User	Heavy User Placebo
C 0 h (before)	0	4.1 ± 3.4	3.5 ± 3.2
C maximum	49.1 ± 24.9	120.9 ± 78.1	NA
C 8 hours after	0	3.5 ± 2.9	3.3 ± 3.1
AUC 0-8 hr	35 ± 14	86 ± 54	28 ± 25
t½ ß (h)	1.6 ± 0.2	3.0 ± 1.5	27.4 ± 9.7

Heavy users who were given placebo still had significant blood levels of THC at least 16 hours after their last use of marijuana

Occasional users returned to 0 within 8 hours of marijuana use.

1 occasional user was unable to tolerate this dose of marijuana

C=Concentration in blood [ng/ml]
AUC = Area under the curve [total drug absorbed]
t½ ß = Half life of THC

Relationship of THC level to impairment:[6]

- Critical Tracking Task (keeping cursor in place)
- Stop Signal Task (reaction time)
- Tower of London Task (correct decisions)
- Significant effects found with THC levels:
  - 2-5 ng/ml -- Only Critical Tracking impaired
  - >5 ng/ml -- Stop signal & Tower of London impaired
- Critical tracking effects compared to alcohol
  - First 2 hours equivalent to BAC > 1.0 mg/ml
  - 2-6 hours equivalent to BAC > 0.05 mg/ml
- Stop signal and Tower of London tests do not show impairment with BAC <0.06 mg/ml

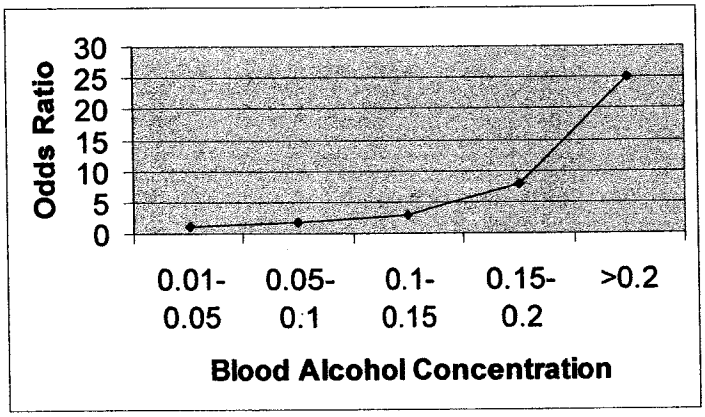
Effects of cannabinoids on driving[7]

- Marinol and a cannabis decoction in whole milk
  - Placebo was hemp decoction in whole milk
  - Cannabis decoction 17 or 46 mg THC
  - Marinol 20 mg
- Obvious impairment noted with all doses
- Tracking test most significant [keeping the vehicle on the road] Effects up to 5 hours

SB 212 Enforcement of Medical Marijuana Limitations

Relative Risk of Death[8]

- Drivers killed in road crashes (3398) in western Australia
- Blood specimens within 4 hours of crash
- Responsibility analysis based on 8 mitigating factors; only "culpable" drivers included
- 29.1% had alcohol ≥ 0.05% BAC [legal limit for DUI in Australia]
- 26.7% had psychoactive drugs – 13.5% Cannabinoids



	Drivers	Odds Ratio
Drug & Alcohol Free	1704 (50%)	1
Opiates	59 (1.7%)	1.41*
Benzodiazepines	34 (1%)	1.27*
THC only	58 (1.7%)	2.7
THC only (≥5ng/ml)	49(1.4%)	6.6
Stimulants (all drivers)	53 (1.6%)	2.27*
Stimulants (truckers)	22(15.8%)	8.83
*Not significant		

- THC ≥ 5ng/ml odds ratio similar to drivers with BAC ≥ 0.15%
- THC + BAC ≥ 0.05% odds ratio 2.8 times BAC ≥ 0.05% alone

Responsibility for Death[9]

- 10,799 drivers involved in traffic fatalities in France 2001-2003; prospective study
- Blood specimen within 4 hours of crash
- THC cut off level 1 ng/ml
- Responsibility analysis

	Alcohol & drug free	**THC ≥ 1 ng/ml**	**Alcohol ≥ 0.05%**	**Alcohol and THC**
All drivers	7886	391	1908	278
Known responsibility	7339	360	1823	272
Responsible	3996	252	1647	254
Not responsible	3343	108	176	18
Responsible/ not responsible ratio	1.2	2.3	9.4	14.1

I'm OK to drive[10]

- Marijuana users were interviewed to determine beliefs about using and driving
  - Only 10% believed they were too impaired to drive when under the influence
  - 16% believed their driving improved when they were using!
- Of these marijuana users who also drank alcohol [most of them]
  - 60% believed that they were too impaired to drive after 4 alcohol drinks.
- 70% believed driving under the influence of marijuana did not cause crashes

National Organization for the Reform of Marijuana Laws (NORML)

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SB 212 Enforcement of Medical Marijuana Limitations

Principles of Responsible Marijuana Use[11]

I. Adults Only
Cannabis consumption is for adults only. It is irresponsible to provide cannabis to children.

II. No Driving
The responsible cannabis consumer does not operate a motor vehicle or other dangerous machinery while impaired by cannabis, nor (like other responsible citizens) while impaired by any other substance or condition, including some medicines and fatigue.

Although cannabis is said by most experts to be safer than alcohol and many prescription drugs with motorists, responsible cannabis consumers never operate motor vehicles in an impaired condition. Public safety demands not only that impaired drivers be taken off the road, but that objective measures of impairment be developed and used, rather than chemical testing.

III. Set and Setting
The responsible cannabis user will carefully consider his/her set and setting, regulating use accordingly.

IV. Resist Abuse
Use of cannabis, to the extent that it impairs health, personal development or achievement, is abuse, to be resisted by responsible cannabis users.

V. Respect Rights of Others
The responsible cannabis user does not violate the rights of others, observes accepted standards of courtesy and public propriety, and respects the preferences of those who wish to avoid cannabis entirely.

No one may violate the rights of others, and no substance use excuses any such violation. Regardless of the legal status of cannabis, responsible users will adhere to emerging tobacco smoking protocols in public and private places.

Adopted by the NORML Board of Directors
February 3, 1996
Washington, DC

SB 212 Enforcement of Medical Marijuana Limitations

REFERENCES:

[1] http://mdt.mt.gov/publications/datastats.shtml#crash

[2] Personal communication, Montana State Crime Lab

[3] *http://www.nhtsa.dot.gov/people/injury/research/job185drugs/index.htm

[4] Leirer, 1991 Marijuana Carry-Over Effects on Aircraft Pilot Performance, Aviation, Space, and Environmental Medicine, March, 1991, 221-227.

[5] Toennes, et.al., 2008, Comparison of Cannabinoid Pharmacokinetic Properties in Occasional and Heavy Users Smoking a Marijuana or Placebo Joint, J Anal Toxicology 32: 470-477

[6]Ramaekers, et.al., 2006, Cognition and Motor Control as a Function of Δ9-THC concentration in serum and oral fluid: Limits of Impairment. Drug and Alcohol Dependence 85: 114-122.

[7] Menetry, etal., Assessment of driving capability through the use of clinical and psychomotor tests in relation to blood cannabinoids levels following oral administration of dronabinal or of a cannabis decoction. Journal of Analytical Toxicology 2005 (29):327-338.

[8] Drummer, et.al., 2003,The involvement of drugs in drivers of motor vehicles killed in Australian road traffic crashes. Accident Analysis and Prevention 943 1-10.

[9] Biecheler, et.al., 2008, SAM Survey on "Drugs and Fatal Accidents": Search of substances consumed and comparison between drivers involved under the influence of alcohol or cannabis. Traf Inj Prev 9:11-21

[10] Terry & Wright, 2005, Self-reported driving behaviour and attitudes towards driving under the influence of cannabis among three different user groups in England. Addictive Behaviours 30:619-626.

[11] http://www.norml.org/index.cfm?Group_ID=3417

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DPHHS – QUALITY ASSURANCE DIVISION
MEDICAL MARIJUANA PROGRAM
CHILDREN, FAMILIES, AND HEALTH AND HUMAN SERVICES
INTERIM COMMITTEE ANNUAL REPORT
DECEMBER 31, 2008

Pursuant to 50-46-103(9), MCA, the department shall report annually to the legislature the number of applications for registry identification cards, the number of qualifying patients and caregivers approved, the nature of the debilitating medical conditions of the qualifying patients, the number of registry identification cards revoked, and the number of physicians providing written certification for qualifying patients. The department may not provide any identifying information of qualifying patients, caregivers, or physicians.

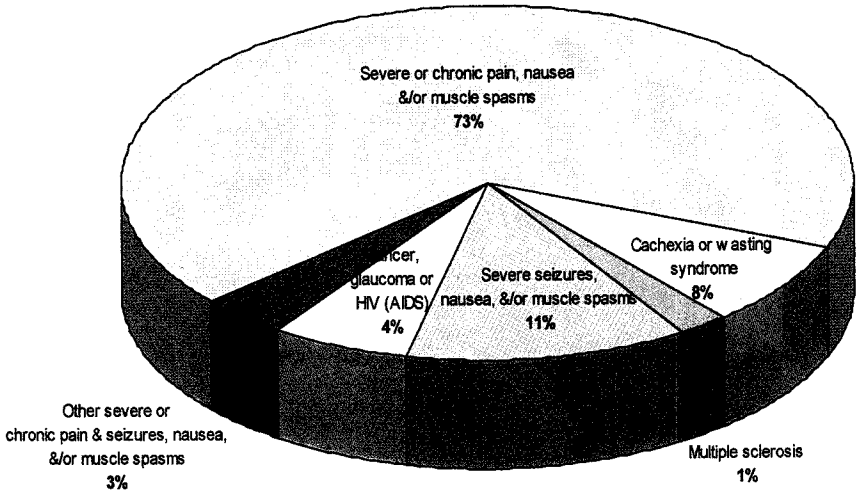
On January 21, 2005, the first Medical Marijuana Program (MMP) registry identification cards were issued to 26 qualifying patients and eight caregivers. Since the start of the program in November 2004, 1729 applications have been approved. As of December 31, 2008, the following information is provided as required for the MMP:

- 1577 approved qualifying patients
- 465 approved registered caregivers
- 1 minor approved
- 171 physicians providing written certification for qualifying patients
- 42 counties with qualifying patients
- 2 registry identification cards revoked
- 10 qualifying patients have died
- 140 qualifying patient cards have lapsed, (not renewed)

One hundred twenty-six of the 465 caregivers have more than one qualifying patient. These 126 caregivers serve 837 qualifying patients or 53% of the registry's patients.

Percentage increases in the Medical Marijuana Program between 2005 and 2008 have risen steadily. The number of doctors certifying the benefits of the use of medical marijuana has increased by 148%, the number of caregivers has increased by 5713%, and the number of approved qualifying patients has increased by 5965%. Graphics depicting these increases appear at the end of the report.

Predominate Medical Condition



Predominate Medical Condition	Qualifying Patients	Qualifying Patients Percentage
Multiple sclerosis	20	1%
Severe seizures, nausea, &/or muscle spasms	181	11%
Cancer, glaucoma or HIV (AIDS)	63	4%
Other severe or chronic pain & seizures, nausea, &/or muscle spasms	43	3%
Severe or chronic pain, nausea &/or muscle spasms	1150	73%
Cachexia or wasting syndrome	120	8%
Totals	1577	100%

The registration fee charged to qualifying patients is based on actual program costs and has dropped since the inception of the MMP.

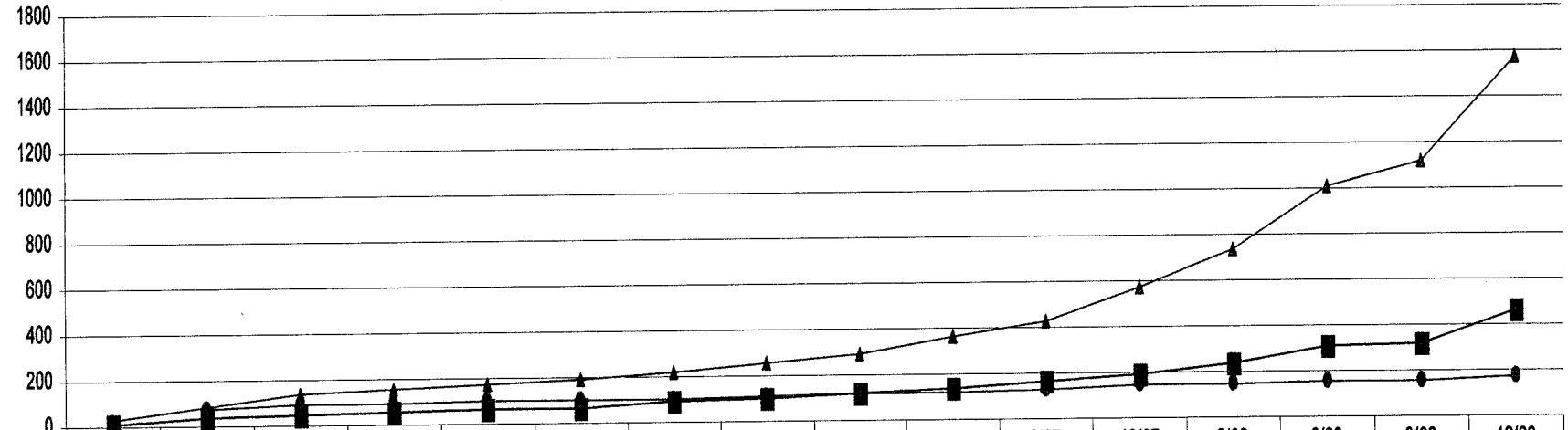
Effective Date	MMP Registration Fee
1/1/05	$200.00
7/1/05	100.00
7/1/06	50.00
7/1/07	50.00
7/1/08	50.00

The Department has adjusted the fees to reflect actual Department operational costs. The Department does not anticipate a fee adjustment will be required prior to FY 09.

Prepared by: Quality Assurance Division

December 2008

Number of Qualifying Patients, Caregivers, and Doctors in the Medical Marijuana Program



	1/05	3/05	6/05	9/05	12/05	3/06	6/06	9/06	12/06	6/07	9/07	12/07	3/08	6/08	9/08	12/08
Qualifying Patients	26	86	135	156	176	189	222	252	287	368	428	572	736	1006	1119	1577
Caregivers	8	35	49	58	66	67	87	101	116	139	161	194	233	311	319	465
Doctors		69	90	95	98	100	100	111	114	121	130	145	150	158	157	171

Prepared by: Quality Assurance Division

December 2008